



LAB & EPI NEWS

MASSACHUSETTS STATE LABORATORY INSTITUTE
305 South Street Jamaica Plain, Massachusetts 02130

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George F. Grady, M.D., State Epidemiologist

Ralph J. Timperi, M.P.H., Assistant Commissioner for Laboratory Sciences
Lynne Mofenson, M.D., Assistant Commissioner for Communicable Disease Control

EPIDEMIOLOGY OF AIDS IN MASSACHUSETTS SUBMITTED BY THE AIDS EPIDEMIOLOGY PROGRAM

As of March 31, 1989, 2,205 cases of AIDS have been reported in Massachusetts, 1,997 of whom are Massachusetts residents. Massachusetts currently has the ninth largest number of AIDS cases in the nation and accounts for 54% of the cases in the New England states.

In Massachusetts, ethnic minorities bear a disproportionate burden of AIDS cases. The incidence of AIDS in the black population (21% of all AIDS cases) is 5.7 times their racial prevalence in the Massachusetts population. For hispanics, the incidence of AIDS (9% of all AIDS cases) is 3.6 times that of the hispanic prevalence in the Massachusetts population.

The predominant transmission categories for AIDS in Massachusetts closely reflect those in the United States as a whole. The majority of adult cases are homosexual or bisexual men (62%), followed by intravenous drug users (22%; 4% of whom are homosexual males), and heterosexual contact with a person at risk for AIDS (9%). Almost 2/3 of the cases in the heterosexual contact category are persons born in countries where heterosexual contact is believed to play a major role. In recent years, the proportion of AIDS cases among the predominant risk groups has been changing. The proportion of homosexual/bisexual male cases is decreasing and the proportion of cases among intravenous drug users is increasing.

While eighty-nine percent of the state's AIDS cases are male, there has been a gradual increase in the proportion of adult women with AIDS. Between 1983 and 1987, the proportion of female AIDS cases rose from 2% to 13%. The major transmission category for women with AIDS is intravenous drug use, followed by heterosexual contact with a person at risk for AIDS (particularly contact with intravenous drug users).

Women with AIDS are more likely to be of racial or ethnic minority groups.

Geographically, most AIDS cases are in Boston (47%) and the metro Boston area (27%), with 25% of cases in the remainder of the state. However, the proportion of cases from outside the metro Boston area is increasing slowly. The various geographic regions of the state have diverse AIDS case demographics, illustrating that each region has unique characteristics that need to be taken into consideration when targeting AIDS educational efforts and services.

(continued on p.2, EPIDEMIOLOGY)

CENTRAL LABORATORY FOR THE SEROEPIDEMIOLOGICAL STUDY OF HIV ANTIBODY PREVALENCE IN CHILDBEARING WOMEN

Submitted by the
Newborn Screening Laboratories

Since 1986, the State Laboratory Institute (SLI) has been monitoring the seroprevalence of HIV infection in childbearing women. In September 1988, the Newborn Screening Program of the SLI was awarded a contract by the National Institute of Child Health and Human Development (NICHD) for a Research and Development Central Laboratory (RDCL) to support a national survey based on pilot studies conducted by Massachusetts. The Principal Investigator for this study is Rodney Hoff, Sc.D., Assistant Director of the Newborn Screening Program. The mission of the RDCL is to (1) provide technical laboratory support and training for the national survey of HIV seroprevalence in childbearing women, (2) carry out a regional survey of HIV seroprevalence in childbearing women, and (3) research and develop methods for laboratory diagnosis of HIV infections in newborns.

The SLI assists the federal Centers for Disease Control (continued on p. 3, NEWBORN)

EPIDEMIOLOGY(continued from p.1)

Forty-one AIDS cases have been reported in children less than 13 years of age; 33 of these are Massachusetts residents. The majority of these cases (82%) are children born to a parent at risk for AIDS, followed by transfusion-associated disease (12%). The epidemiology of children with AIDS generally mimics that of female AIDS cases; thus, pediatric AIDS cases are more likely to be persons of color (black-52%, hispanic/other-15%, white-30%).

As of February 28, 1989, the cumulative number of AIDS cases reported in the United States was 88,096; 1,440 of these were pediatric cases. The federal Centers for Disease Control estimate that approximately 1-1.5 million people are currently infected with HIV, and that by the end of 1992, 365,000 AIDS cases will be diagnosed in this country. In Massachusetts, corresponding estimates are that 30,000 state residents are now infected with HIV, and up to 6,000 AIDS cases are expected to be reported by the end of 1992.

CDC FAMILY OF HIV SEROSURVEYS SUBMITTED BY THE AIDS EPIDEMIOLOGY PROGRAM AND THE STATE LABORATORY INSTITUTE

Information on the levels and trends of Human Immunodeficiency Virus (HIV) infection is needed to anticipate future health needs, set public policy and target and evaluate the impact of HIV prevention activities. In response to this need, the federal Centers for Disease Control (CDC) implemented the national "Family of HIV Serosurveys". In the Spring of 1988, Massachusetts instituted CDC-sponsored seroprevalence studies that follow a standardized study design to obtain this information.

In Massachusetts, "CDC Family of Serosurveys" activities have been jointly undertaken by the Boston Department of Health and Hospitals and the Massachusetts Department of Public Health. There are two types of surveys being conducted: population and clinic seroprevalence studies. Neonatal (childbearing women), sentinel hospitals and prisoners are examples of population surveys. Clinic-based surveys include Sexually Transmitted Disease, Tuberculosis, Women's Health and Drug Treatment clinics.

There are 39 Standard Metropolitan Statistical Areas (SMSAs) participating in the surveys. Metropolitan areas were selected on the basis of five criteria: cumulative incidence of AIDS, rates of sexually transmitted diseases, geographic representativeness, ability to carry out surveys and willingness to participate in annual surveys. Clinics were chosen by

local and state health officials based on number of patient visits, demographics of the population, geographic location and willingness to participate. In the clinic based surveys, both blinded and non-blinded surveys are planned. The CDC have devised protocols that detail the inclusion/exclusion criteria and sample size, etc., for each survey.

Blinded surveys make use of specimens and data available from other sources to avoid self-selection bias. Personal identifiers are permanently removed prior to HIV antibody testing ensuring patient confidentiality. In addition to survey specific data, age, race and geographic information are retained and subsequently linked to an HIV result. These data will be used to assist in focusing prevention activities.

The blinded surveys have two limitations: the inability to locate infected persons for counseling and the lack of detailed risk information. To avoid these limitations, concurrent non-blinded surveys are conducted or voluntary counseling and testing services are offered. Both of these strategies supply detailed information on risk behavior. Clients are informed of results, appropriately counseled and recontacted if necessary.

The data obtained from the surveys will be used to initiate prevention programs, determine types of preventive services to offer and target groups requiring education. In addition, this data will also help in evaluating the impact of the program's activities.

MASSACHUSETTS PHLEBOTOMISTS' NETWORK

Phlebotomists from over 75 Massachusetts hospitals, independent laboratories and related agencies met late last year at the State Laboratory Institute to discuss their professional goals, training opportunities, and professional certification. At this meeting it was decided to form a Phlebotomists' Network that would meet periodically to share information and organize educational programs. There are several professional organizations that provide voluntary certification to those who meet required training, experience and examination requirements. Through the Massachusetts Phlebotomists' Network, many phlebotomists are learning more about these organizations and are taking steps to become certified.

To have your name included on the Phlebotomists' Network mailing list, call Joanne Joyce at the State Laboratory, (617) 522-3700, ext. 101. To learn more about the Network, call the Massachusetts Laboratory Training Program (LTP) Office at (617) 522-3700 ext. 135. The LTP can provide you with a Network contact in your area of the state.

(CDC) in implementing the National Newborn HIV Survey. Dr. Hoff and his staff have conducted training courses in conjunction with CDC on the Massachusetts filter paper technology used for studies of HIV seroprevalence in childbearing women. The SLI and CDC have also worked closely on evaluating the suitability of commercial ELISA kits in testing newborn filter paper specimens, preparing a laboratory manual for the assay of HIV antibody on filterpaper specimens, and implementing a quality assurance program for states involved in the newborn survey.

The SLI is collaborating in a multi-state study that includes Massachusetts, Maine, New Hampshire, North Carolina, and Rhode Island. The data for Massachusetts indicate that HIV seroprevalence in childbearing women varies from a low of 0.3 per 1000 to a high of 11.6 per 1000. The survey has shown that inner city hospitals in Boston have the highest rates (11.6 per 1000) and that several regions of Massachusetts outside of the Boston Standard Metropolitan Statistical Area (SMSA) have high rates, e.g., western Massachusetts (3.6 per 1000).

Current efforts of the RDCL emphasize development and evaluation of molecular biologic assays for HIV infection in newborns. HIV infection in newborns cannot be diagnosed by conventional serologic tests for HIV because these assays cannot differentiate between the IgG antibodies produced by the newborn and those passively transferred from the mother across the placenta.

Barbara Weiblen has been working on the development and evaluation of serologic tests for IgM antibodies to HIV. Because IgM antibodies do not cross the placenta, their presence in a newborn indicates a specific immune response to infection. Dr. Anne Comeau has established a Polymerase Chain Reaction (PCR) method for detection of HIV DNA in small samples of blood. The presence of HIV DNA in a newborn's blood provides direct evidence of HIV infection.

DISPOSAL OF WASTES

The addition of a new chapter to the State Sanitary Code regarding the Storage and Disposal of Infectious or Physically Dangerous Medical or Biological Wastes has been proposed, as well as corresponding amendments to licensure regulations for hospitals, long term care facilities, clinical laboratories, out-of-hospital dialysis units, and clinics. The proposed amendment to

HIV TESTING AT THE MASSACHUSETTS STATE LABORATORY INSTITUTE SUBMITTED BY THE SPECIAL SEROLOGY LABORATORY

The Special Serology Laboratory performs primary and confirmatory testing for Alternate Testing Sites, state funded Sexually Transmitted Disease Clinics and Sero-prevalence Surveys conducted in cooperation with the federal Centers for Disease Control. The laboratory also provides reference HIV testing services for Massachusetts physicians, hospitals and laboratories for specimens with positive ELISA and Western blot results.

The table below summarizes testing performed at the State Laboratory between March 1988 and March 1989. A total of 10,700 samples tested by ELISA during this period, an increase of 30% over the preceding year. Two thousand four hundred (2,400) samples were tested by Western blot and immunofluorescence assay (IFA).

The Laboratory also conducts testing for the federal Centers for Disease Control's "Family of HIV Serosurveys". These blinded sera samples comprised 17% of the total number of specimens received and 15% of the total number of tests performed between March '88 and March '89.

ANTI-HIV TESTING MARCH 1988-MARCH 1989

CATEGORY	SPECIMENS	TESTS		
		ELISA	WB	IFA
PRIMARY	10,700	11,740	1,040	140
CONFIRMATORY	2,400		2,400	835
CDC SEROSURVEY	2,696	2,769	73	
TOTAL	15,796	14,509	3,513	975

the regulations would incorporate provisions of the proposed new chapter of the State Sanitary Code. Public hearings were held April 11 and 13 by the Division of Community Sanitation of the Department of Public Health. On the basis of comments made at these hearing as well as comments received in written testimony, the document is being revised for submission to the Public Health Council for their approval. Updates on this topic will follow in the next newsletter.

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STATE LABORATORY INSTITUTE
305 South Street
Jamaica Plain, MA 02130

STATE LABORATORY JOINS PUBLIC HEALTH NETWORK

The Massachusetts State Laboratory Institute now has a separate mailbox on the Public Health Network (PHN). The laboratory identification code is PHF21500 and our mailbox is MA.LAB. Please send all electronic mail for the lab to this box rather than to the Communicable Disease mailbox.

ELECTRONIC ROUTING SERVICE FOR MORBIDITY AND MORTALITY WEEKLY REPORT (MMWR)

An electronic routing service for telephone calls relating to the MMWR series of publications was activated in Editorial Services, Epidemiology Program Office (EPO), Centers for Disease Control. This service will respond to inquiries relating to subscriptions, requests for information about material already published, and questions regarding submitting and scheduling material for publication. The number for the routing service is (404) 332-4555.

Seeking a **New England Area Resource Director** to administer activities associated with the National Laboratory Training Network (NLTN). A Bachelors degree in Biology or a Physical Science plus four years of relevant laboratory experience with two years in a supervisory capacity. Advanced degree in Health or Administration with training/experience a significant plus. Send resume' to The State Laboratory Institute, attention: Harry Kevorkian, 305 South Street, Jamaica Plain, MA 02130.

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Environmental and Biological Sciences

George F. Grady, M.D.
State Epidemiologist

Ralph Timperi, M.P.H.
Assistant Commissioner for
Laboratory Sciences

Lynne Mofenson, M.D.
Assistant Commissioner
Communicable Disease Control

EDITORS: Marcia S. Izzii/Doris L. Johnson